

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): In a computer, a computer-implemented method for executing an application system call, said application system call involving invoking a kernel thread from a system call stub in a user space of an operating system of said computer, comprising:

saving user space context data in a save state upon entering a kernel space of said operating system from said user space; and

thereafter modifying a return pointer in said save state to an address of a unblock handler call stub in user space instead of an address of said system call stub in said user space, thereby causing said kernel thread to return to said unblock call handler stub instead of returning to said system call stub when said kernel thread completes execution, wherein the unblock handler call stub subsequently transfers the kernel thread to an unblock upcall handler which communicates with a scheduler in the user space.

Claim 2 (currently amended): The computer-implemented method of claim 1 further including registering said address of said unblock call handler stub with a kernel of said operating system prior to said executing said application ~~said~~ system call.

Claim 3 (Original): The computer-implemented method of claim 2 wherein said registering is performed during application startup.

Claim 4 (Original): The computer-implemented method of claim 2 wherein said registering is performed during a thread library startup.

Claim 5 (Original): The computer-implemented method of claim 2 further including registering a data pointer associated with said address of said unblock call handler stub with said kernel.

Claim 6 (Original): The computer-implemented method of claim 1 further including passing, after said saving, a data pointer associated with said system call stub as an argument to said unblock call handler stub.

Claim 7 (Original): The computer-implemented method of claim 6 further including passing, after said saving, a return value of said system call and an address of said system call stub as arguments to said unblock call handler stub.

Claim 8 (currently amended): The computer-implemented method of claim 7 further including branching from said unblock call handler stub to ~~an~~ the unblock call handler ~~routine~~ in said user space.

Claim 9 (currently amended): The computer-implemented method of claim 8 further including branching from said unblock call handler ~~routine~~ to said system call stub in said user space when said unblock call handler ~~routine~~ finishes executing without the kernel thread returning to said kernel space.

Claim 10 (currently amended): The computer-implemented method of claim 8 wherein said unblock call handler routine includes code for notifying a the scheduler in said user space that said kernel thread is unblocked.

Claim 11 (currently amended): The computer-implemented method of claim 1 wherein said computer implements a PA-RISC™ (Precision Architecture - Reduced Instruction Set Computing) architecture.

Claim 12 (currently amended): The computer-implemented method of claim 1 wherein said computer implements a PA-IPF™ (Precision Architecture - Itanium Processor Family) architecture.

Claim 13 (Original): The computer-implemented method of claim 1 wherein said computer implements MxN threading.

Claim 14 (Original): The computer-implemented method of claim 1 wherein said system call involves accessing an I/O device.

Claim 15 (currently amended): An article of manufacture comprising a program storage medium having computer readable code embodied therein, said computer readable code being configured for executing an application system call, said application system call involving invoking a kernel thread from a system call stub in a user space of an operating system of said computer, comprising:

code for saving user space context data in a save state upon entering a kernel space of said operating system from said user space; and

code for modifying, after said saving, a return pointer in said save state to an address of a unblock handler call stub in user space instead of an address of said system call stub in said user space, thereby causing said kernel thread to return to said unblock call handler stub instead of returning to said system call stub when said kernel thread completes execution, wherein the unblock handler call stub transfers the kernel thread to an unblock upcall handler which communicates with a scheduler in the user space.

Claim 16 (currently amended): The article of manufacture of claim 15 further including code for registering said address of said unblock call handler stub with a kernel of said operating system prior to said executing said application ~~said~~ system call.

Claim 17 (Original): The article of manufacture of claim 16 wherein said registering is performed during one of an application startup and a thread library startup.

Claim 18 (Original): The article of manufacture of claim 16 further including code for registering a data pointer associated with said address of said unblock call handler stub with said kernel.

Claim 19 (Original): The article of manufacture of claim 15 further including code for passing, after said saving, at least one of a data pointer associated with said system call stub, a return value of said system call and an address of said system call stub as an argument to said unblock call handler stub.

Claim 20 (currently amended): The article of manufacture of claim 15 further including code for branching from said unblock call handler stub to ~~an~~ the unblock call handler ~~routine~~ in said user space.

Claim 21 (currently amended): The article of manufacture of claim 20 further including code for branching from said unblock call handler ~~routine~~ to said system call stub in said user space when said unblock call handler ~~routine~~ finishes executing without returning to said kernel space.

Claim 22 (currently amended): The article of manufacture of claim 22 wherein said unblock call handler ~~routine~~ includes code for notifying ~~a~~ the scheduler in said user space that said kernel thread is unblocked.

Claim 23 (Original): The article of manufacture of claim 22 wherein said computer implements MxN threading.

Claim 24 (currently amended): In a computer implementing MxN threading, a computer-implemented method for executing an application system call from a user space of an operating system of said computer, said application system call involving invoking a kernel thread in a kernel space of said operating system from a system call stub in a user space of said operating system, comprising:

 saving user space context data in a save state upon entering said kernel space;

 thereafter modifying a return pointer in said save state to an address of a unblock handler call stub in user space instead of an address of said system call stub in said user space, thereby causing said kernel thread to return to said unblock call handler stub instead of returning to said system call stub when said kernel thread completes execution, and

 returning from said unblock call handler stub in said user space to said system call stub in said user space without entering said kernel space again, wherein the unblock handler call stub transfers the kernel thread to an unblock upcall handler which communicates with a scheduler in the user space.

Claim 25 (Original): The computer-implemented method of claim 24 further including passing, after said saving, a data pointer associated with said system call stub, a return value of said system call, and an address of said

system call stub as arguments to said unblock call handler stub.

Claim 26 (Original): The computer-implemented method of claim 24 further including registering said address of said unblock call handler stub with a kernel of said operating system prior to starting up of an application executing said application system call.

Claim 27 (currently amended): The computer-implemented method of claim 24 further including branching from said unblock call handler stub to ~~an~~ the unblock call handler ~~routine~~ in said user space prior to branching to said system call stub.

Claim 28 (currently amended): The computer-implemented method of claim 27 wherein said unblock call handler ~~routine~~ includes code for notifying ~~a~~ the scheduler in said user space that said kernel thread is unblocked.